The requirements of the program are structured to meet these two objectives and include mathematical and scientific foundations as well as extensive interdisciplinary study related to environmental issues. The upper-level courses integrate the student's program of study and provide hands-on practice in an environmental field. The environmental problems addressed in many classes and seminars will focus on the adjacent urban/suburban region and its impact on the surrounding environment.

Most environmental problems resist solutions from any single discipline and environmental education programs need to reflect the complexity of the environmental processes they present. Therefore the program utilizes a rigorous interdisciplinary approach. The curriculum draws upon the expertise of faculty in the areas of biology, chemistry, geology, mathematics, environmental ethics and values, public policy, science education, economics, geography, public health and social change.

The Environmental Science and Studies Program has two concentrations: Environmental Studies and Environmental Science. For information about the Environmental Science Concentration, see the Fisher College of Science and Mathematics (http://catalog.towson.edu/undergraduate/fisher-science-mathematics).

Director: Christopher Salice (Biological Sciences)

Affiliated Faculty

Professors: Rachel Burks (Physics, Astronomy & Geosciences), Ryan Casey (Chemistry), Brian Fath (Biological Sciences), Susan Greens (Biological Sciences), Sarah Haines (Biological Sciences), L. Scott Johnson (Biological Sciences), Steven Lev (Physics, Astronomy & Geosciences), Antonette Marzotto (Political Science), John Morgan III (Geography & Environmental Planning), Jay Nelson (Biological Sciences), Thomas Rhoads (Economics), Martin Roberge (Geography & Environmental Planning), Robert Rook (History), Lev Ryzhkov (Chemistry), Stephen Scales (Philosophy & Religious Studies), Erik Scully (Biological Sciences), Richard Seigel (Biological Sciences), Jane Wolfson (Biological Sciences), Tamara Woroby (Economics).

Associate Professors: Kent Barnes (Geography & Environmental Planning), Vanessa Beauchamp (Biological Sciences), Harald Beck (Biological Sciences), Mark Bulmer (Biological Sciences), Lillian Carter (Health Science), John LaPolla (Biological Sciences), Kang Lu (Geography & Environmental Planning), James Manley (Economics), Clare Muhor (Chemistry), Karen Oslund (History), David Owby (Chemistry), Roland Roberts (Biological Sciences), Shannon Stitzel (Chemistry), Timothy Sullivan (Economics), Jeremy Tasch (Geography & Environmental Planning), Paporn Thebpanya (Geography & Environmental Planning), Donn Worgs (Political Science).

Assistant Professors: Andrea Brace (Health Science), John Bullock (Political Science), David Hearn (Biological Sciences), Matthew Hemm (Biological Sciences), Kathryn Kautzman (Chemistry), Sya Kedzior (Geography & Environmental Planning), Joel Moore (Physics, Astronomy & Geosciences), Makmiller Pedroso (Philosophy & Religious Studies), Chris Salice (Biological Sciences), John Sivey (Chemistry).

Lecturer: Natalia Fath (Geography & Environmental Planning).

Major in Environmental Science and Studies

- Major in Environmental Science and Studies - Environmental Studies Concentration (http://catalog.towson.edu/undergraduate/liberal-arts/environmental-science-studies/environmental-studies-concentration).

Minor in Environmental Science and Studies


Courses

ENVS 301 PEOPLE AND PESTS (3)
Impact of select pest species (insects, weeds, or microbes) on humans and human affairs; why some organisms become pests; approaches to controlling pest organisms. Not for credit towards ENVS major or minor. Prerequisites: GenEd I.B. and at least one high school or college Biology course. GenEd I.D.

ENVS 337 THE CHESAPEAKE BAY AND ITS WATERSHED (3)
The Chesapeake Bay and the natural processes and anthropogenic disturbances that influence its health are the focus. The multidisciplinary nature of environmental problem solving is also explored through writing assignments. Requires grade of C or better to fulfill GenEd requirement. Prerequisites: GenEd I.A writing course, two courses in two different disciplines from among the following: BIOL 200/BIOL 200L (BIOL 201), BIOL 202, CHEM 104, CHEM 131/ CHEM 131L (CHEM 110), GEOG 121, GEOG 101, or permission of the instructor. GenEd I.D.

ENVS 382 ENVIRONMENTAL EDUCATION AND SERVICE LEARNING IN THE TROPICS (3)
Designed for majors in Science or Education with an interest in Environmental Education; course work will take place in Costa Rica; emphasis on tropical forest ecology concepts applicable to K-12 environmental education and management of tropical natural resources. Cross-listed as BIOL 382. Prerequisites: minimum Junior status and consent of the instructor.

ENVS 431 SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND STUDIES (1-4)
Study of a special topic related to Environmental Science and Studies. Topic can vary and will be announced. May be repeated if a different topic is covered.
ENVS 432 SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND STUDIES (1-4)
Study of a special topic related to Environmental Science and Studies. Topic can vary and will be announced. May be repeated if a different topic is covered.

ENVS 438 SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND STUDIES (1-4)
Study of a special topic related to Environmental Science and Studies. Topic can vary and will be announced. May be repeated if a different topic is covered.

ENVS 471 INDEPENDENT STUDY IN ENVIRONMENTAL SCIENCE AND STUDIES (1-3)
Studies in selected content areas tailored to student needs. This course may be repeated for a total of 3 credits. Prerequisites: ESS major only, completion of 30 credit hours of required ESS coursework or consent of instructor.

ENVS 482 ENVIRONMENTAL RESEARCH (3)
Independent investigation of an environmental problem/question under the guidance of a faculty member. Paper and public presentation required. Prerequisites: ESS major, junior or senior standing and consent of instructor. Special permit required.

ENVS 485 ENVIRONMENTAL INTERNSHIP (3)
Practical application of environmental science and studies through a supervised work experience with business, industry, public or private agency. Analytical final product in which the student integrates workplace experience with academic studies required. Prerequisites: ESS major, junior or senior standing, 2.50 QPA in ESS required courses, and consent of internship coordinator.

ENVS 491 SENIOR SEMINAR (3)
Synthesis, analysis and application of information from a broad range of perspectives. Prerequisites: ESS major, completion of GenEd I.D. requirement, and senior standing. Special permit required.